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(19) **United States**(12) **Patent Application Publication**
Guthrie(10) **Pub. No.: US 2021/0236450 A1**(43) **Pub. Date: Aug. 5, 2021**(54) **METHODS AND COMPOSITIONS FOR
PREVENTING AND TREATING AUDITORY
DYSFUNCTIONS**(71) Applicant: **United States Government as
represented by the Department of
Veterans Affairs, Washington, DC (US)**(72) Inventor: **O'Neil W. Guthrie, Flagstaff, AZ (US)**(21) Appl. No.: **17/229,833**(22) Filed: **Apr. 13, 2021****Publication Classification**(51) **Int. Cl.****A61K 31/216** (2006.01)**A61K 31/365** (2006.01)**A61K 45/06** (2006.01)**A61K 31/215** (2006.01)**A61K 36/74** (2006.01)(52) **U.S. Cl.**CPC **A61K 31/216** (2013.01); **A61K 31/365**(2013.01); **A61K 36/74** (2013.01); **A61K****31/215** (2013.01); **A61K 45/06** (2013.01)**Related U.S. Application Data**

(60) Continuation of application No. 16/506,904, filed on Jul. 9, 2019, now Pat. No. 10,987,333, which is a continuation of application No. 15/854,660, filed on Dec. 26, 2017, now abandoned, which is a division of application No. 15/230,257, filed on Aug. 5, 2016, now Pat. No. 9,889,107, which is a division of application No. 13/907,590, filed on May 31, 2013, now Pat. No. 9,457,009.

(60) Provisional application No. 61/701,397, filed on Sep. 14, 2012, provisional application No. 61/653,577, filed on May 31, 2012.

(57)

ABSTRACT

The invention provides methods for treating auditory impairments in a subject in need of treatment comprising administering to said subject an effective amount of a composition comprising, as an active agent, one or more of a carboxy alkyl ester, a quinic acid derivative, a caffeic acid derivative, a ferulic acid derivative, or a quinic acid lactone or derivative thereof or pharmaceutically acceptable salt thereof and an acceptable carrier or excipient, so as to treat auditory impairments in the subject.